

3.1 Carrizo Plain

Daily minimum, maximum, and average values of temperature (T), relative humidity (RH), scalar wind speed (S), and standard deviation of the unit vector wind direction (σ_{θ}) are listed in Tables 3, 4, 5, and 6. In addition, unit vector wind direction (θ) and vector wind speed (U) for each day are also listed in these tables. The 5-min values of θ and U were used to construct wind roses for June, July, August, and September which are shown in Figures 21, 22, 23, and 24, respectively.

The weather at the Carrizo Plain during CCOS was warm and dry. Daytime maximum temperatures often reached 35 to 40 °C with corresponding relative humidity values of 10 to 30%. Nighttime lows ranged from 10 to 15 °C with a wide range of relative humidities from 50% to near saturation. Scalar wind speeds were rather low averaging just under 3 m s⁻¹. The winds show an interesting distribution with predominate flows from the northwest, northeast, and southeast. The northwesterly and southeasterly flows are along the axis of the valley (i.e., diurnal wind flows).

Table 3. Carrizo Plain monthly weather and wind summary for June.

Day	T (°C)			RH (%)			S (m s ⁻¹)			Θ (deg)	Ū (m s ⁻¹)	σ _θ (deg)		
	min	max	avg	min	max	avg	min	max	avg			min	max	avg
1	6.1	32.6	20.0	9.5	52.9	27.9	0.5	4.7	2.2	18.9	0.1	1.2	68.1	16.9
2	7.0	32.4	20.3	9.7	61.9	33.9	0.4	5.4	2.3	296.8	0.8	1.8	70.0	16.9
3	6.6	33.0	21.1	13.7	56.1	32.1	0.2	5.5	2.4	59.7	0.4	0.5	75.8	15.1
4	8.4	33.9	22.4	12.0	72.6	30.1	0.3	7.8	3.0	205.6	2.0	1.5	68.0	14.2
5	6.3	26.7	16.6	13.5	97.2	48.9	0.6	5.8	2.9	8.1	1.8	1.9	75.0	16.3
6	10.7	30.8	21.1	18.0	79.3	37.9	0.6	6.6	2.4	15.5	0.8	1.2	68.7	16.8
7	7.8	27.1	17.6	16.8	77.2	41.5	0.3	8.0	3.1	246.5	2.3	1.1	66.8	17.5
8	9.4	18.9	13.5	37.5	96.1	73.5	1.2	6.7	3.5	282.3	2.1	3.4	37.6	14.9
9	8.0	22.3	14.9	31.3	96.5	64.5	0.4	6.1	2.9	17.4	2.0	2.6	62.9	17.5
10	5.3	24.2	16.3	21.9	97.9	55.2	0.6	6.1	2.9	29.5	2.2	1.7	69.6	15.8
11	7.5	27.1	19.1	18.6	73.2	38.9	0.5	6.2	3.5	48.5	2.9	0.8	63.0	12.9
12	12.1	28.9	21.8	24.5	59.4	40.3	0.5	7.8	4.3	40.6	3.9	1.4	61.2	10.7
13	15.2	33.3	24.9	26.1	72.4	43.8	0.7	7.2	3.8	50.3	3.0	2.0	39.4	10.9
14	14.3	40.3	29.2	11.9	64.0	34.8	0.3	7.1	2.9	66.9	2.0	1.3	64.7	13.7
15	16.1	39.9	29.0	13.1	55.9	31.7	0.4	5.7	2.3	318.3	1.4	1.0	73.3	16.5
16	12.5	36.5	25.5	12.4	78.3	33.6	0.3+	7.2+	2.5+	323.1+	1.8+	1.5	74.7	17.6
17	9.8	30.8	19.3	32.0	98.9	66.3	0.5	8.4	3.6	321.2	3.4	0.9	34.0	11.7
18	13.1	30.3	19.5	30.7	95.1	67.6	0.6	6.6	2.7	315.4	2.4	2.5	55.8	17.8
19	9.6	30.9	20.9	29.8	88.1	55.6	0.2+	6.3+	2.6+	324.3+	1.6+	1.7+	66.9+	15.0+
20	11.1	35.4	24.1	20.5	77.3	45.9	0.4	5.9	2.4	357.1	1.1	0.7	63.4	15.4
21	13.9	37.7	26.7	15.4	60.4	34.3	0.2	6.8	2.4	328.9	1.1	1.2	75.6	16.3
22	13.7	35.5	24.9	14.0	51.9	30.8	0.2	7.1	3.0	278.8	1.6	1.1	42.5	14.9
23	8.7	33.3	22.3	18.0	73.5	38.5	0.2	5.4	2.5	297.5	1.5	1.3	67.2	17.3
24	10.1	32.4	21.1	25.9	98.4	58.5	0.7	6.5	2.6	318.4	2.2	1.6	66.4	15.4
25	10.9	34.5	23.5	15.2	70.8	41.2	0.2+	5.4+	2.4+	313.6+	0.7+	0.9	65.5	15.8
26	11.7	36.2	25.0	11.8	54.6	30.0	0.5	7.1	2.7	46.7	1.1	0.9	73.2	14.8
27	13.9	37.3	26.4	12.2	44.7	25.7	0.4	6.0	2.3	312.8	0.8	0.7	72.3	18.0
28	13.5	36.9	26.4	10.2	35.5	19.8	0.2	6.6	2.3	284.4	1.0	0.7	72.0	18.0
29	11.9	35.6	25.1	10.1	32.6	19.1	0.3	6.6	2.8	272.7	1.5	1.0	68.5	17.3
30	9.8	34.5	23.8	8.9	38.6	19.7	0.2+	6.1+	2.5+	292.9+	1.7+	0.5	65.4	16.9
min	5.3	18.9	13.5	8.9	32.6	19.1	0.2	4.7	2.2		0.1	0.5	34.0	10.7
max	16.1	40.3	29.2	37.5	98.9	73.5	1.2	8.4	4.3		3.9	3.4	75.8	18.0
avg	10.5	32.3	22.1	18.2	70.4	40.7	0.4	6.5	2.8	339.7	1.0	1.4	64.3	15.6

Explanation of Symbols:

- All data unavailable for day
- * More than two hours of data unavailable
- + Two hours or less of data unavailable
- (no symbol) All data available for day

Table 4. Carrizo Plain monthly weather and wind summary for July.

Day	T (°C)			RH (%)			S (m s ⁻¹)			Θ (deg)	U (m s ⁻¹)	C _θ (deg)		
	min	max	avg	min	max	avg	min	max	avg			min	max	avg
1	8.0	31.9	21.5	13.1	56.6	28.8	0.4	5.8	2.5	314.6	1.7	1.9	75.1	16.4
2	9.1	30.5	20.0	19.1	66.4	38.3	0.5	5.8	2.4	282.0	1.3	2.0	70.2	18.9
3	4.9	26.7	16.1	18.7	98.1	52.7	0.5	6.0	2.7	303.2	2.1	1.5	46.8	17.8
4	4.0	27.6	16.6	19.6	97.0	44.9	0.2	5.4	2.2	309.8	1.5	2.0	67.8	18.5
5	5.6	27.5	17.6	22.6	77.6	47.1	0.2+	5.5+	2.5+	314.5+	1.7+	1.3	66.3	17.5
6	6.9	27.8	18.4	28.1	78.0	49.5	0.6+	5.2+	2.3+	312.2+	1.3+	1.5	77.9	18.1
7	5.9	28.3	17.5	13.2	76.9	42.7	0.2+	7.7+	2.4+	311.6+	1.6+	1.7+	72.0+	19.1+
8	6.5	28.9	18.2	24.5	68.3	40.3	0.2	5.8	2.3	323.3	1.3	2.0	71.4	18.4
9	8.1	30.9	19.7	18.6	60.4	40.6	0.4+	5.6+	2.4+	279.4+	0.4+	1.3	67.6	16.6
10	8.7	30.9	20.3	23.4	67.8	43.9	0.2+	6.6+	2.4+	319.2+	1.6+	1.2	59.1	15.9
11	9.6	31.0	20.7	26.0	68.7	44.9	0.8	6.6	3.0	320.1	1.8	0.9	66.3	13.7
12	8.4	28.3	18.4	31.8	78.3	55.0	0.3	7.6	3.3	325.0	3.0	1.5	69.5	12.7
13	7.6	33.1	20.5	8.7	86.8	43.4	0.2	7.4	2.5	326.3	1.5	1.4	75.3	15.7
14	9.6	35.6	23.3	11.5	57.3	30.5	0.2	5.6	2.5	346.8	1.1	1.6	70.8	16.1
15	12.1	34.1	23.0	15.1	56.2	30.9	0.3+	5.0+	2.3+	320.2+	1.0+	1.2+	63.4+	17.5+
16	8.4	30.2	19.8	13.3	54.3	32.5	0.3+	6.3+	2.6+	307.0+	2.1+	1.1	63.8	15.8
17	6.6	30.8	20.0	22.7	94.5	46.3	0.4	5.6	2.7	12.4	2.1	0.9	66.2	15.5
18	12.0	31.3	23.3	18.2	70.0	40.3	0.2	7.1	3.6	49.7	3.1	1.6	55.7	11.3
19	12.0	33.5	24.7	10.5	56.3	28.7	0.4	6.9	3.2	56.4	2.4	1.9	74.9	14.0
20	10.6	34.9	24.6	9.1	59.4	27.5	0.4	5.4	2.7	70.7	1.8	1.3	67.1	13.3
21	10.4	36.9	24.7	12.8	51.5	27.3	0.2	6.5	2.2	331.6	1.1	1.0	63.7	19.4
22	9.5	34.4	23.8	12.6	66.8	33.8	0.2+	6.1+	3.1+	40.4+	2.4+	1.9	71.8	15.0
23	14.4	36.1	26.4	13.0	52.6	29.4	0.4	6.3	2.9	46.2	1.9	1.2	68.5	13.1
24	14.9	38.6	26.9	9.3	45.2	23.1	0.4	6.0	2.4	336.8	1.1	1.0	66.5	15.6
25	13.4	36.7	25.9	8.1	32.8	19.1	0.2	6.2	2.3	318.3	1.9	1.1	62.2	16.7
26	11.0	34.7	23.6	12.3	55.0	29.5	0.2+	5.9+	2.4+	359.3+	1.6+	1.2	75.2	16.9
27	7.9	33.5	22.5	13.4	70.3	34.4	0.3+	8.2+	3.4+	37.8+	2.5+	1.0	70.4	11.9
28	11.5	34.9	24.9	18.0	67.6	33.8	0.3+	6.1+	2.6+	31.0+	1.4+	1.4	72.3	16.1
29	13.2	37.4	25.9	12.8	52.6	28.1	0.3+	6.9+	2.7+	36.3+	1.2+	1.2	76.2	13.6
30	14.8	38.0	27.3	12.1	40.6	25.2	0.3+	7.1+	3.0+	57.0+	1.8+	0.8	70.4	12.4
31	18.0	38.4	28.9	9.3	44.2	26.2	0.6	6.6	3.0	59.3	1.9	0.7	73.7	13.0
min	4.0	26.7	16.1	8.1	32.8	19.1	0.2	5.0	2.2		0.4	0.7	46.8	11.3
max	18.0	38.6	28.9	31.8	98.1	55.0	0.8	8.2	3.6		3.1	2.0	77.9	19.4
avg	9.8	32.7	22.1	16.2	64.8	36.1	0.3	6.3	2.7	354.1	1.2	1.4	68.3	15.7

Explanation of Symbols:

- All data unavailable for day
- * More than two hours of data unavailable
- + Two hours or less of data unavailable
- (no symbol) All data available for day

Table 5. Carrizo Plain monthly weather and wind summary for August.

Day	T (°C)			RH (%)			S (m s ⁻¹)			Θ (deg)	Ū (m s ⁻¹)	C _θ (deg)		
	min	max	avg	min	max	avg	min	max	avg			min	max	avg
1	20.9	40.3	29.9	13.9	35.7	24.9	0.3	8.2	2.5	274.2	0.7	1.2	79.2	18.1
2	17.0	39.5	28.3	15.3	40.7	25.8	0.2	6.1	2.2	282.6	0.8	1.0	63.0	17.9
3	16.4	35.4	26.6	20.6	51.7	31.0	0.2	7.1	3.0	221.5	1.9	0.3	71.6	14.6
4	14.3	36.3	26.0	20.9	63.0	38.1	0.3+	5.8+	2.0+	320.7+	1.0+	1.4	73.4	19.1
5	14.1	36.3	26.6	18.5	61.5	36.9	0.3+	7.7+	3.0+	41.0+	1.8+	1.3	65.1	13.7
6	13.0	37.2	25.9	9.1	48.6	27.0	0.2	6.9	2.2	319.4	1.7	1.3	73.9	20.9
7	12.4	33.8	23.0	15.3	52.7	31.1	0.3	6.4	2.8	311.1	1.4	1.2	56.3	14.5
8	9.4	33.7	22.2	11.4	53.6	30.0	0.3+	7.3+	2.5+	240.5+	1.3+	1.0	69.8	17.9
9	8.7	34.9	22.3	8.4	52.4	27.9	0.2	7.1	2.9	216.3	1.3	1.0	79.4	13.8
10	6.3	32.7	21.1	16.0	73.1	36.2	0.3+	6.8+	3.0+	33.7+	1.9+	0.9	70.6	14.0
11	10.4	32.3	23.2	13.8	68.8	34.2	0.5	6.5	3.4	69.1	2.6	0.9	54.1	10.2
12	9.6	35.5	23.9	12.3	51.5	28.1	0.2+	5.6+	2.5+	44.4+	1.2+	0.8+	71.4+	13.7+
13	11.6	35.4	24.8	7.7	36.7	20.8	0.4	5.4	2.8	40.9	1.9	1.2	66.3	14.9
14	11.5	36.1	25.4	7.8	37.9	20.0	0.3	5.6	2.5	45.5	1.2	1.3	64.3	15.6
15	12.0	36.6	25.9	10.3	43.4	21.5	0.2	6.1	2.4	39.8	1.4	1.3	70.6	15.7
16	15.3	37.9	27.3	8.9	36.8	21.9	0.3	6.5	2.8	47.8	1.6	1.0	74.8	13.3
17	13.9	37.8	26.0	10.1	35.4	22.2	0.2	6.1	2.3	278.4+	0.6+	1.0+	71.7+	18.0+
18	9.0	34.2	22.3	5.1	44.0	20.3	0.3	5.7	2.5	330.2	1.6	1.4	68.2	15.9
19	5.9	31.4	19.8	10.6	62.8	28.8	0.2	6.3	2.6	319.3	2.2	1.7	47.0	14.6
20	6.9	32.2	20.3	13.1	68.1	37.6	0.2+	5.6+	2.4+	0.4+	1.4+	0.9	69.2	16.0
21	8.7	32.6	21.2	13.1	57.4	31.3	0.2	5.5	2.2	314.8	0.9	0.9	70.7	16.9
22	8.1	32.7	20.2	14.2	57.0	32.7	0.3	7.1	2.6	272.9	1.0	1.2	74.9	15.2
23	8.1	32.1	20.4	12.8	71.3	36.8	0.2	7.1	2.5	326.5	1.5	1.6	61.7	16.3
24	9.7	33.3	22.8	16.6	46.5	30.5	0.2	7.7	2.9	54.1	1.8	2.1	58.7	13.2
25	14.8	35.1	25.0	9.9	56.6	29.3	0.2	6.6	2.4	13.3	0.9	1.3	76.9	15.0
26	13.0	35.8	23.9	12.2	31.1	20.0	0.3	5.0	2.1	325.9+	0.3+	1.1+	76.1+	16.1+
27	12.3	34.6	23.0	11.0	30.7	20.8	0.3+	8.4+	2.9+	209.4+	1.2+	0.8	74.5	13.8
28	10.0	32.7	21.9	16.5	50.9	26.1	0.2	6.8	2.3	320.2	1.9	1.5	49.9	15.4
29	13.2	29.2	19.9	27.2	78.9	48.8	0.2	6.2	2.6	346.5	2.1	1.6	50.6	12.7
30	10.5	26.2	17.2	39.9	87.6	68.1	0.2	6.0	2.3	302.2	1.8	1.0	63.5	17.3
31	8.5	23.4	16.1	43.2	87.8	65.6	0.3	7.2	2.3	244.4	1.3	0.8	64.5	17.3
min	5.9	23.4	16.1	5.1	30.7	20.0	0.2	5.0	2.0		0.3	0.3	47.0	10.2
max	20.9	40.3	29.9	43.2	87.8	68.1	0.5	8.4	3.4		2.6	2.1	79.4	20.9
avg	11.5	34.1	23.3	15.0	54.0	31.4	0.3	6.5	2.6	342.6	0.7	1.2	67.2	15.5

Explanation of Symbols:

- All data unavailable for day
- * More than two hours of data unavailable
- + Two hours or less of data unavailable
- (no symbol) All data available for day

Table 6. Carrizo Plain monthly weather and wind summary for September.

Day	T (°C)			RH (%)			S (m s ⁻¹)			Θ (deg)	U (m s ⁻¹)	C _θ (deg)		
	min	max	avg	min	max	avg	min	max	avg			min	max	avg
1	10.2	23.0	16.3	35.7	84.3	62.4	0.3+	6.6+	2.7+	229.0+	2.1+	1.9+	70.0+	16.1+
2	8.0	23.6	16.0	36.3	94.3	63.3	0.6	4.9	2.4	16.4	0.7	1.1	69.3	15.8
3	8.7	25.1	17.5	32.2	81.9	56.2	0.5	5.7	2.2	332.6	1.4	2.3	60.0	18.7
4	6.8	23.0	15.6	28.8	72.5	47.5	0.7	7.4	3.5	43.0	2.5	2.6	51.7	12.8
5	7.9	23.5	16.9	21.7	68.7	41.6	0.4	6.9	4.0	54.3	3.5	3.3	57.9	10.6
6	7.4	28.1	19.1	18.4	57.3	33.6	0.5	6.9	3.5	76.4	2.4	1.9	45.6	11.5
7	6.1	31.9	19.8	10.9	67.2	33.8	0.2	7.2	2.4	36.4	1.4	1.7	71.0	16.3
8	6.4	32.5	20.1	9.8	54.6	28.4	0.5	5.6	2.1	24.8	0.3	1.3	67.6	16.1
9	6.9	33.0	19.9	9.9	52.0	25.8	0.4	6.1	2.0	326.2	0.4	1.1	64.0	16.1
10	6.3	32.7	19.5	13.0	41.2	24.2	0.3+	7.2+	2.2+	326.3+	0.4+	1.2+	76.8+	15.8+
11	8.5	34.5	20.8	6.7	52.0	23.8	0.2+	6.9+	2.5+	41.2+	0.5+	0.5	64.3	12.2
12	8.4	34.5	22.0	10.9	38.6	23.2	0.2	6.5	2.6	75.1	1.5	1.4	74.2	12.0
13	14.2	36.5	25.5	14.6	50.1	27.3	0.2	7.6	2.6	302.2	0.4	1.7	73.4	14.7
14	12.0	31.4	21.1	30.3	93.7	62.4	0.6	6.5	2.5	321.5	2.1	1.4	76.0	17.2
15	13.3	28.0	21.0	38.5	92.2	61.5	0.6	6.8	3.8	47.6	3.1	2.1	52.0	10.6
16	11.4	31.0	22.0	25.1	72.1	45.3	0.9	8.8	4.0	74.5	2.7	1.2	60.2	10.4
17	12.3	35.3	23.9	17.2	76.6	44.5	0.8	7.9	3.2	55.4	2.1	1.7	73.0	11.1
18	10.6	37.8	24.9	8.9	77.6	37.1	0.2+	7.1+	2.8+	13.2+	0.5+	0.5	68.3	12.1
19	11.0	36.6	24.6	13.0	66.4	32.2	0.2	5.4	2.4	69.1	1.5	1.3	76.7	12.3
20	13.3	37.0	24.0	14.6	54.4	31.9	0.2	6.4	2.1	304.0	0.6	0.6	73.8	15.2
21	10.6	23.9	16.4	47.9	99.6	77.4	1.0	9.4	3.7	244.7	2.5	0.8	41.8	13.4
22	13.3	22.2	16.9	46.8	90.3	69.6	0.5	8.8	4.6	230.5	3.9	3.3	46.9	11.5
23	9.0	23.5	16.4	34.0	99.4	66.9	0.3	5.2	2.4	32.2	1.8	0.8	56.2	14.7
24	4.9	28.3	16.9	25.2	92.5	53.4	0.2	8.3	2.4	42.8	0.9	0.8	69.9	15.4
25	7.5*	13.7*	9.9*	52.1*	71.2*	62.0*	0.3*	2.1*	1.0*	108.3*	0.8*	0.9*	57.9*	11.7*
26	----	----	----	----	----	----	----	----	----	----	----	----	----	----
27	----	----	----	----	----	----	----	----	----	----	----	----	----	----
28	----	----	----	----	----	----	----	----	----	----	----	----	----	----
29	----	----	----	----	----	----	----	----	----	----	----	----	----	----
30	----	----	----	----	----	----	----	----	----	----	----	----	----	----
min	4.9	13.7	9.9	6.7	38.6	23.2	0.2	2.1	1.0		0.3	0.5	41.8	10.4
max	14.2	37.8	25.5	52.1	99.6	77.4	1.0	9.4	4.6		3.9	3.3	76.8	18.7
avg	9.4	29.2	19.5	24.1	72.0	45.4	0.4	6.7	2.8	36.9	0.7	1.5	63.9	13.8

Explanation of Symbols:

- All data unavailable for day
- * More than two hours of data unavailable
- + Two hours or less of data unavailable
- (no symbol) All data available for day

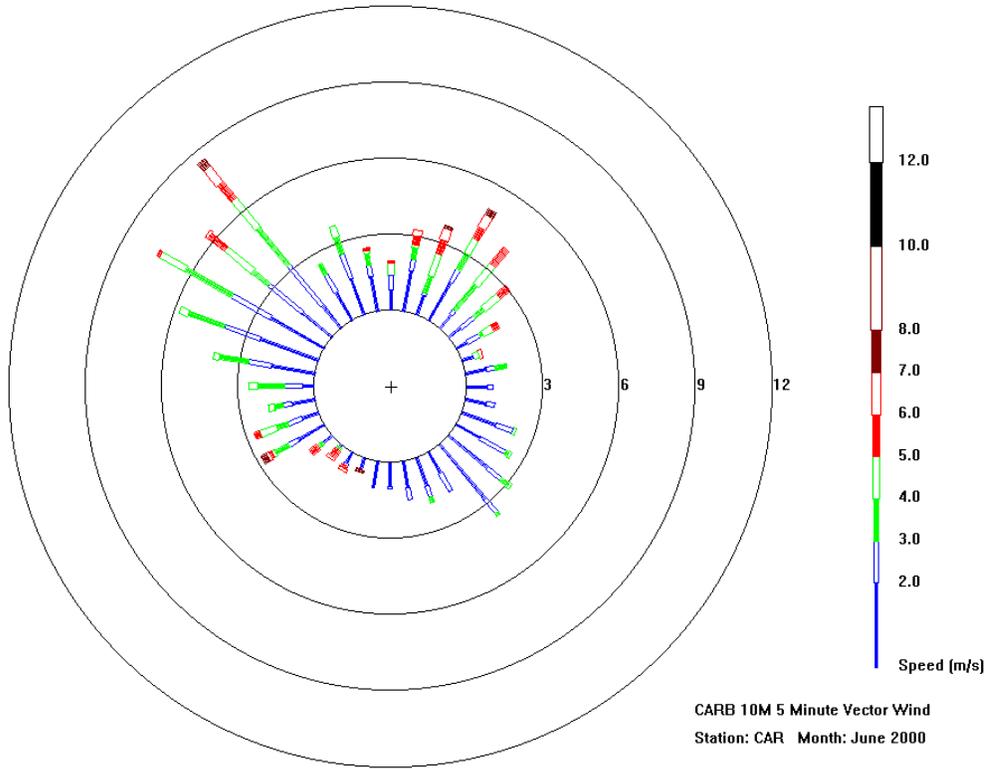


Figure 21. Carrizo Plain wind rose for June.

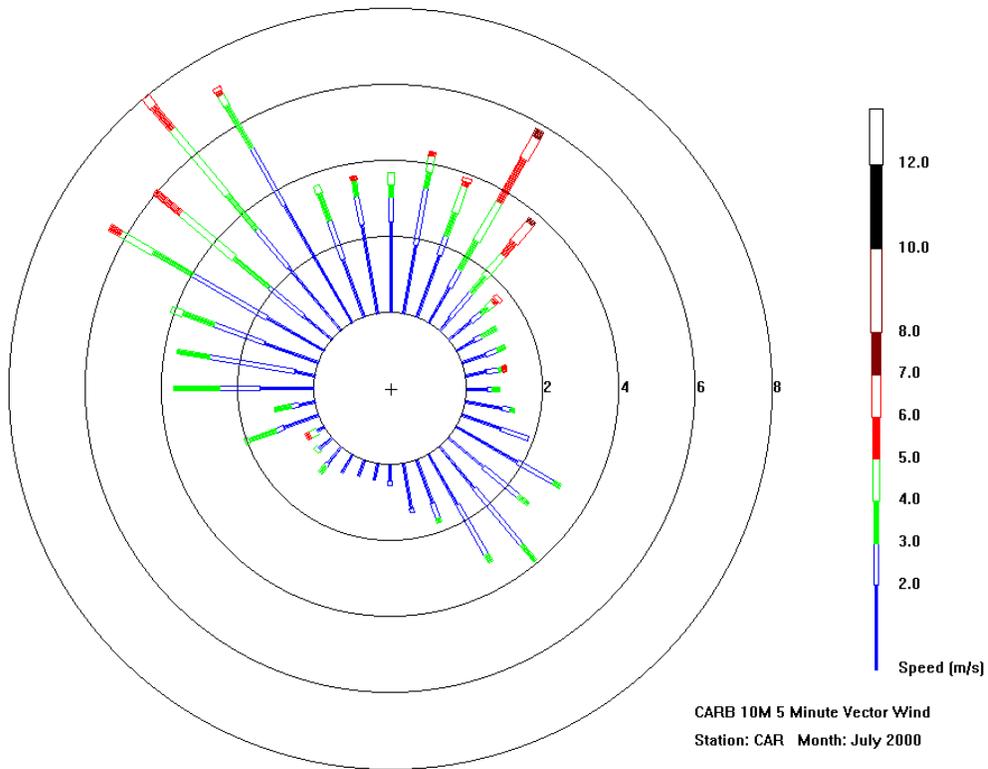


Figure 22. Carrizo Plain wind rose for July.

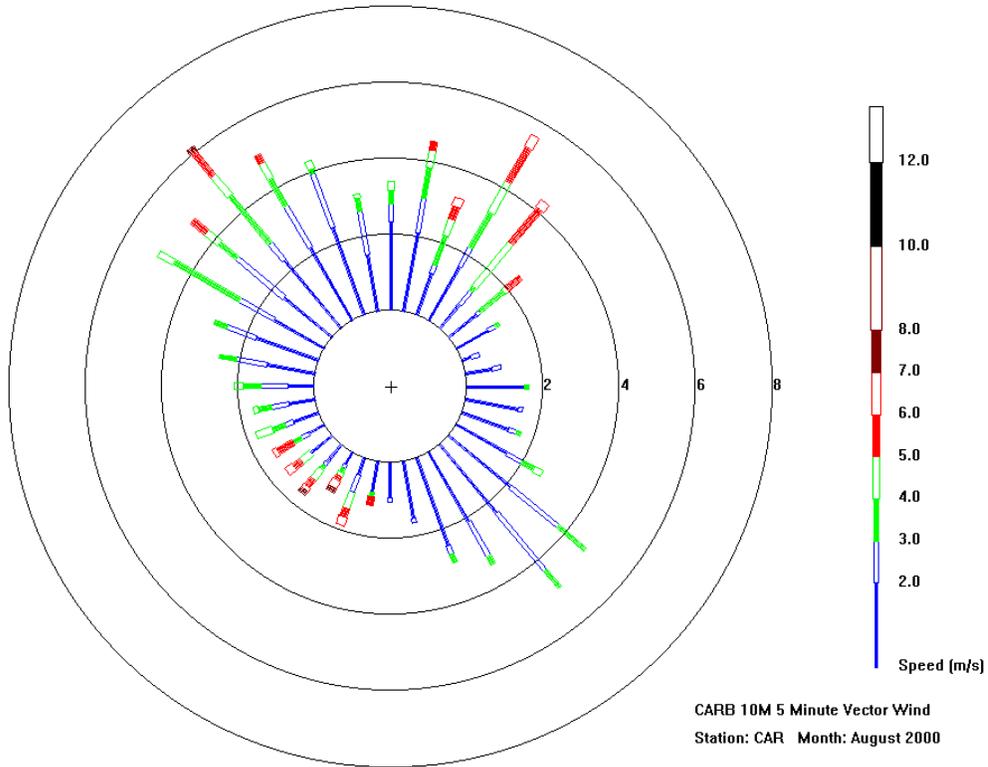


Figure 23. Carrizo Plain wind rose for August.

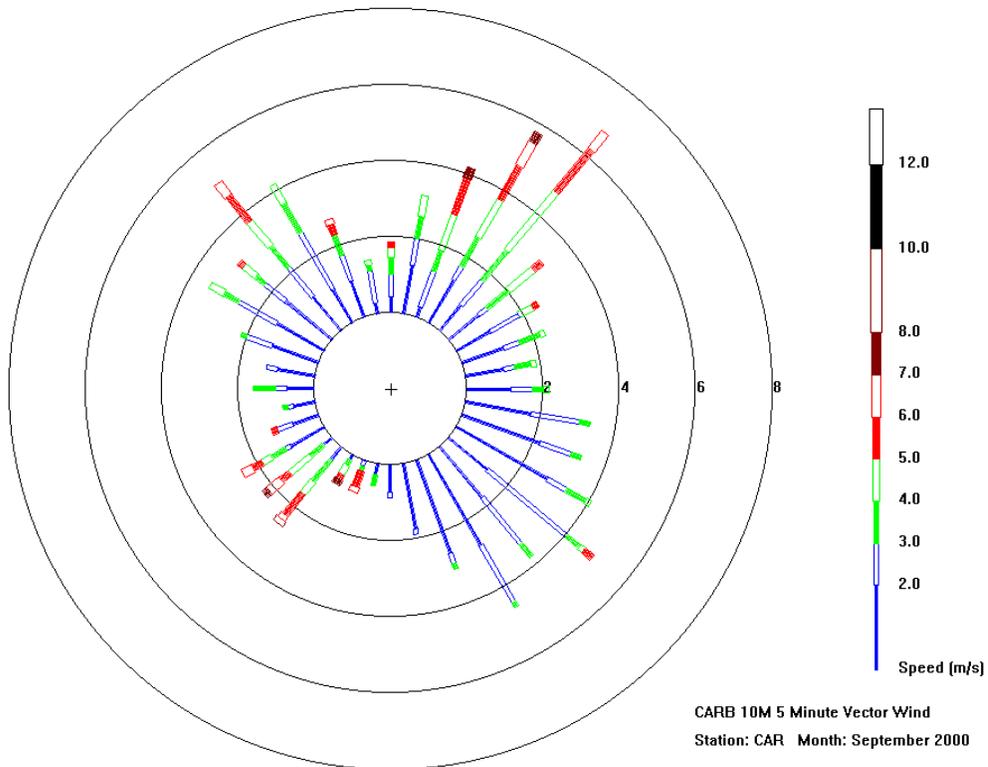


Figure 24. Carrizo Plain wind rose for September.